

**SYSTEM FOR INTEGRATING AN AIRBORNE WIRELESS CELLULAR
NETWORK WITH TERRESTRIAL WIRELESS CELLULAR NETWORKS AND
THE PUBLIC SWITCHED TELEPHONE NETWORK**

Abstract

5 The present non-terrestrial feature transparency system spoofs the Air-to-
Ground Network and the ground-based cellular communication network into
thinking that the wireless subscriber devices have no special considerations
associated with their operation, even though the wireless subscriber devices are
located on an aircraft in flight. This architecture requires that the non-terrestrial
10 feature transparency system on board the aircraft replicate the full functionality of
a given wireless subscriber device, that has a certain predetermined feature set
from a ground-based wireless service provider, at another wireless subscriber
device located within the aircraft. This mirroring of wireless subscriber device
attributes enables a localized cell for in-cabin communication yet retains the
15 same wireless subscriber device attributes for the air-to-ground link. The Air-to-
Ground Network transmits both the subscriber data (comprising voice and/or
other data) as well as feature set data between the Aircraft in-Cabin Network and
the ground-based cellular communication network to thereby enable the wireless
subscriber devices that are located in the aircraft to receive consistent wireless
20 communication services in both the terrestrial (ground-based) and non-terrestrial
regions.